

Carbon Footprint and Energy Usage Annual Report

FY 2007-2008











Table of Contents

| Part I City Efforts Toward Sustainability | |
|--|----------------|
| Introduction | 1 |
| Leading By Example | |
| City of Asheville Sustainability Timeline | |
| City of rishevine susumaching rimemic | |
| Part II Totals by Department (Energy Usage, Cost and Car | bon Footprint) |
| Total Municipal Carbon Footprint by Department | 4 |
| Total Municipal Carbon Footprint by Energy Source | |
| Total Energy Use in Dollars by Department | |
| Electricity Usage and Costs | |
| Natural Gas Usage and Costs. | |
| Fleet Fuel Usage and Costs. | |
| Employee Commuter Carbon Footprint by Department | |
| Part III Department Assessments | |
| City Manager's Office | |
| Asheville Fire and Rescue. | |
| Asheville Police Department. | |
| Building Safety | |
| Civic Center | |
| Finance Department. | |
| Human Resources | |
| Information Technology Services. | |
| Parks, Recreation and Cultural Arts | |
| Planning and Development | |
| Public Works | |
| Transportation and Engineering | |
| Water Resources | |

Introduction

As public service employees, we are given the extraordinary privilege to plan, create, and care for the future of the City of Asheville. The significant opportunity presented to us requires an equally profound sense of responsibility. In 1983 the United Nations Brundtland Commission expressed the necessity for a future based on sustainability in light of growing populations and an increasing depletion of natural resources.

In recent years, the US Conference of Mayors Climate Protection Commitment motivated local governments across the county to establish goals and metrics to reduce carbon footprint and become more sustainable. The City of Asheville embraced this responsibility by creating a sustainability policy to reduce municipal carbon footprint 80% by the year 2050 at a rate of 2% each year.

Sustainability is defined as:

"Making decisions that balance the values of environmental stewardship, social responsibility and economic vitality to meet our present needs without compromising the ability of future generations to meet their needs."

The Sustainability Management Plan (SMP) was created to guide implementation of the municipal carbon footprint reduction goals.

The SMP identifies interdepartmental focus areas, strategic goals and action items intended to guide City efforts in a sustainable direction (Table 1.1).

In June 2009 City Council adopted the SMP to move the City's sustainability initiatives to the next level.

The Annual Report, presented here, is to provide insight into municipal energy usage and carbon footprint to measure the City's progress on the goals set forth in the SMP. It is an accumulation of the data collected through electricity, natural gas, diesel, gasoline, and biodiesel usage in addition to the information from the employee commute survey, Part III includes detailed analyses of each City departments total energy costs, carbon footprint distribution and presents each department's share of the City's total carbon footprint.

The Report is meant to be informational and motivational so that each department can work to fulfill their responsibility to create a vibrant future for the current citizens and future generations.

For more detailed information on the vision, goals and action items outlined in the Sustainability Management Plan, please visit www.AshevilleNC.gov/green

Table 1.1- Sustainability Goals

| Focus Area | Goal |
|--------------------------|--|
| Management Practices | Incorporate sustainability into the City's decision-making process. Provide adequate resources for the implementation of sustainability programs Increase the City's use of environmentally preferable products and services. |
| Employee Education | Incorporate sustainability into City communications and outreach efforts. Increase voluntary employee energy conservation efforts through education. |
| Greenhouse Gas Emissions | Participate in the City's energy management strategy to reduce greenhouse gas emissions. |
| Land Use | Develop and redesign land use policies to support regional sustainable growth. Support sustainable development projects, patterns, and building practices. |
| Facilities | Reduce energy consumption from City facilities through demand reduction and energy efficiency. Increase renewable energy use for City operations. Support the Resolution for LEED® certification for new City buildings. |
| Transportation | Reduce vehicle miles traveled by City employees for commuting. Reduce total fuel consumption of City fleet vehicles. Increase transit ridership. Establish a long-term funding strategy for public transportation. Support the reduction of vehicle miles traveled by City residents and visitors. |
| Water | Continue to provide clean drinking water. Reduce water consumption in City facilities. Reduce energy use associated with treatment and distribution. Support responsible consumption of water by residents and visitors. |
| Solid Waste | Reduce solid waste disposed at landfills from City facilities. Increase our role as state leaders in sanitation and recycling. |



Becoming a global model for responsible energy management through efforts in demand reduction, energy efficiency and renewable energy generation

.....

-A Guiding Principle accompanying the City's Sustainability Vision

Through the combined efforts of staff dedication and the energy initiatives described on this page, the City decreased its energy usage by an astounding 860,000 kilowatt hours—equal to shutting down City Hall for six months! The efforts saved the City \$65,000. In doing so, the City of Asheville demonstrated tremendous community leadership.



TGIT? That's right! For some City workers the weekends begin on Thursday night in a program launched in August 2008 to enhance the City's "triple bottom line" (economic, social and environmental). The 4 day a week, 10 hours a day program applies to all Public Works employees and has reduced costs, benefited employees and helped reduce the City's carbon footprint.

Bottom Line Benefits:

Economic: Total annual cost avoidance—\$11,000

Social: Employees enjoy longer weekends & more family time

Environmental: 13.7% reduction in electricity and natural gas usage for Public Works building, Fleet Maintenance building, and E-building

Better Energy Savings for Tomorrow B.E.S.T



In 2008, the Office of Sustainability created, B.E.S.T, an energy conservation program to remind City employees of all the ways we can contribute to the City's overall energy reduction and savings!





B.E.S.T. utilized educational messaging and action items as reminders, such as those below:

- Bulletin board posters near copiers, printers, and Computers
- Conservation reminder stickers on light switches, electrical outlets and thermostats
- "While You Were Out" energy use summaries for people already exhibiting conservation behavior

Automatic Computer Shutdown Program



With the push of a button the City is accelerating towards its energy reduction goals. In March 2009, the Information Technology Department teamed up with the Office of Sustainability to launch a software program that automatically and remotely shuts down computers accidentally left on overnight starting at 8pm.



Estimate of impact:

Economic: \$12,000 projected savings

Social: Management led project to support sustainability goals



Environmental: 123 tons (Equal to taking 20 SUVs off the road for one year or planting 2861 trees)

City History

Sustainability

1991 Recycled product purchasing policy

1997 Residential Curbside recycling program established

1999 First Energy Audit conducted on City-owned building

2002 Started phasing in LED traffic signals

July 2004 Water Department ISO 14001 certification

July 2004 City joined the Land of Sky Regional Council "Clean Vehicles Coalition"

July 2004 Green Fleet Policy created

of

Aug 2004 First electric vehicles purchased, used for parking enforcement

Aug 2005 Hired TDM coordination to lead alternative commuting programs

Oct 2005 Signed "Mayors Climate Protection Agreement"

Dec 2005 Fast-Fill Compressed Natural Gas Station opened

Jan 2006 Started phasing in LED emergency exit lights in City-owned buildings

Jan 2006 City of Asheville declared Best Workplace for Commuters

July 2006 Established Emergency Ride Home
Program for alternative commuters

Aug 2006 Transit Fare Free pilot project conducted

Jan 2007 Became members of international ICLEI– Local Governments for Sustainability organization

Jan 2007 The Sustainability Advisory Committee on Energy and the Environment established

April 2007 Council Resolution to build LEED certified buildings

April 2007 Council Resolution establishing GHG reduction goal

April 2007 Established Climate Commitment Partnership with Warren Wilson College

May 2007 Biodiesel and ethanol used in all City vehicles as part of City pilot project

July 2007 Sustainable Residential Building Fee Waivers approved

July 2007 Completed the government carbon emissions inventory

Jan 2008 Hired Energy Coordinator

Aug 2008 Public Works Department began working 4-10 compressed work schedule

Nov 2008 Conducted first staff energy conservation outreach campaign

March 2009 Implemented Automatic Evening Computer Shut Down Program

June 2009 Council Resolution adopting the Sustainability Management Plan

Part 2

Totals by Department



AFD- Asheville Fire Department

APD- Asheville Police Department

CO2- Carbon Footprint

HR- Human Resources

IT- Information Technology Services

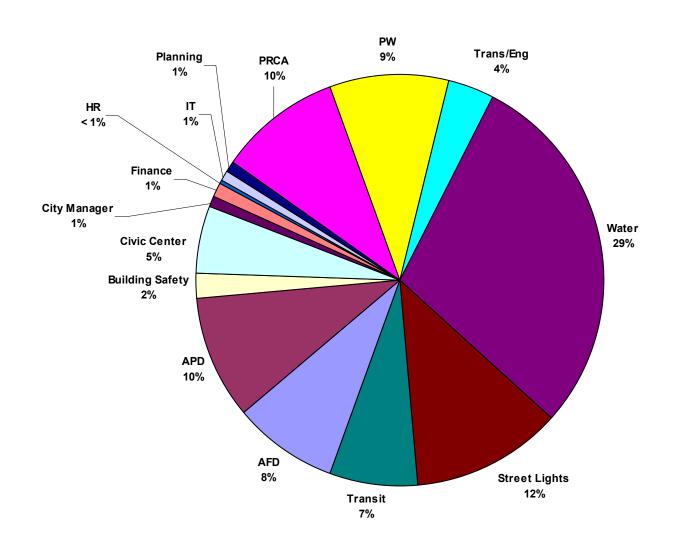
PRCA- Parks Recreation and Cultural Arts

PW- Public Works

Trans/Eng- Transportation and Engineering

Total Municipal Carbon Footprint by Department



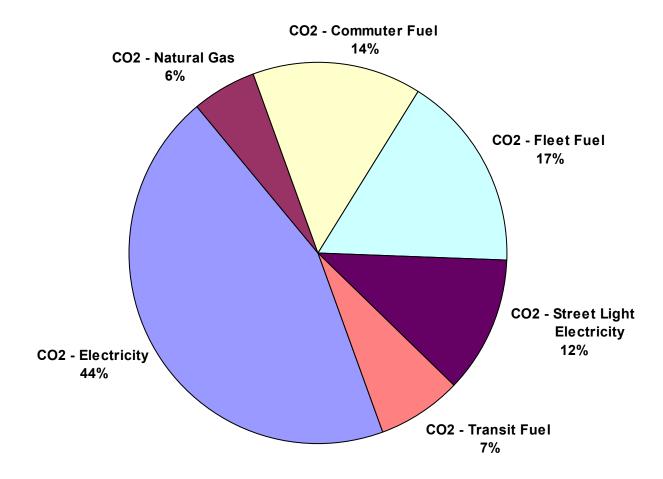


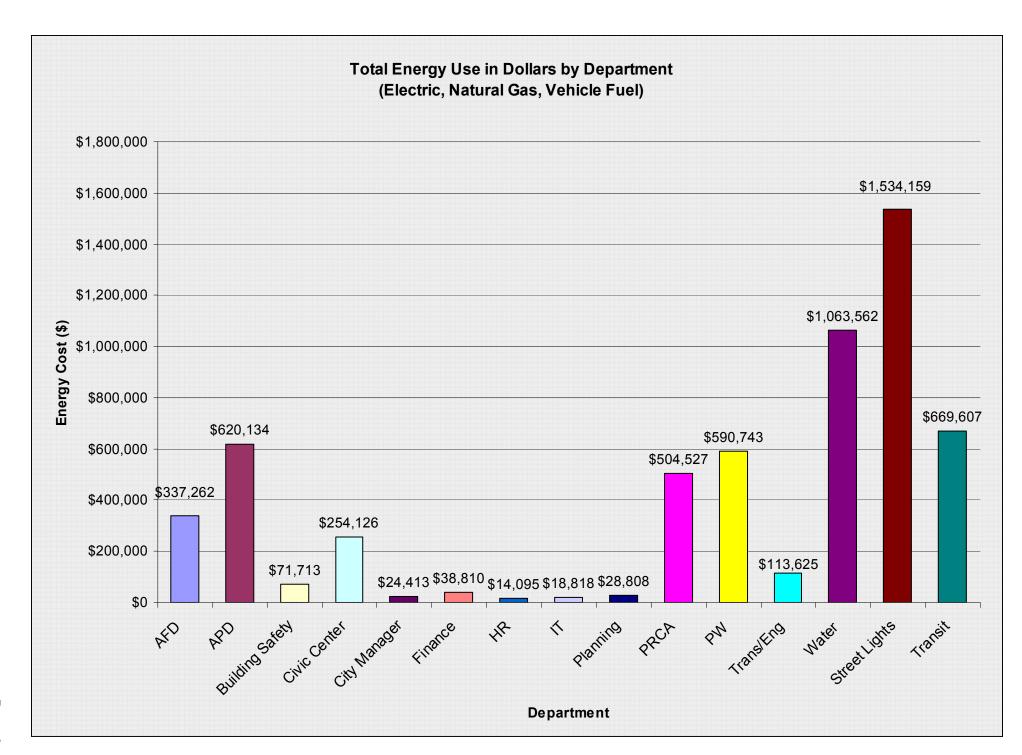
Total Municipal Carbon Footprint





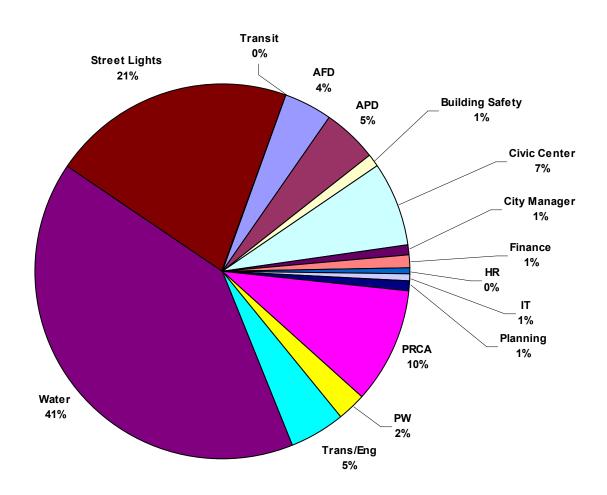


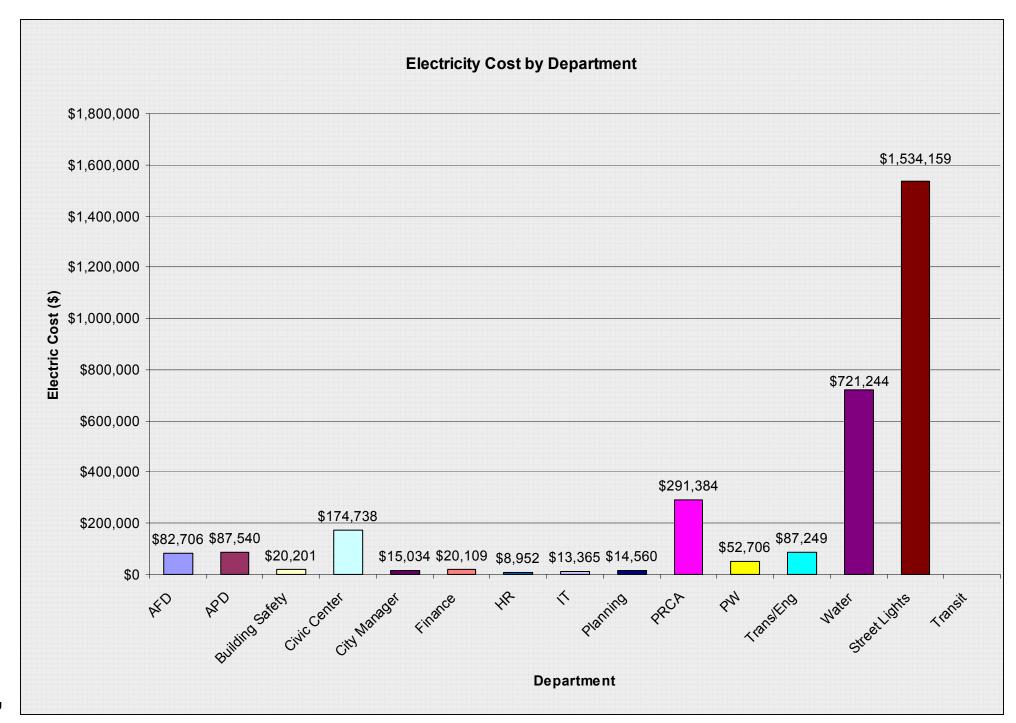






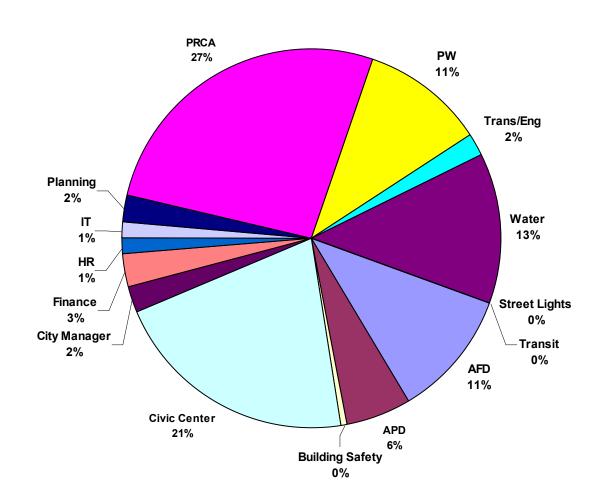
Electricity Usage By Department

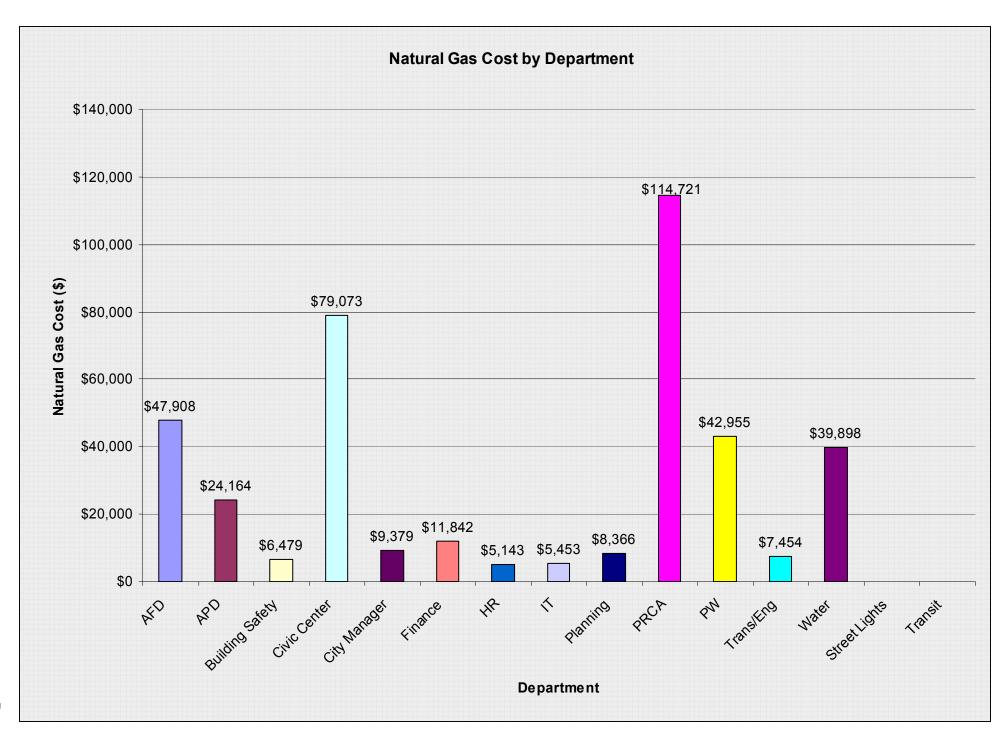






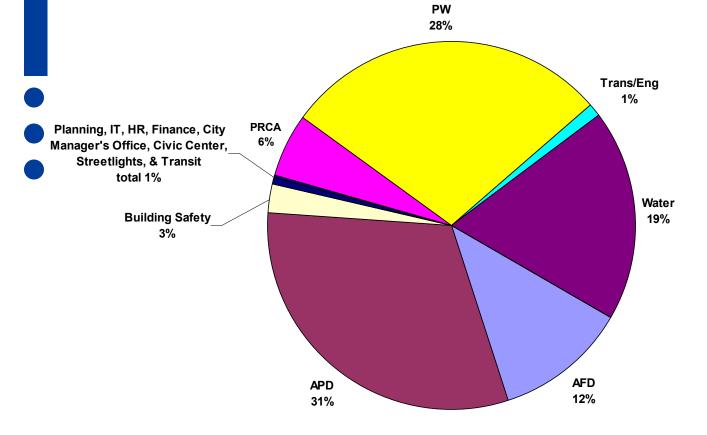
Natural Gas Usage By Department



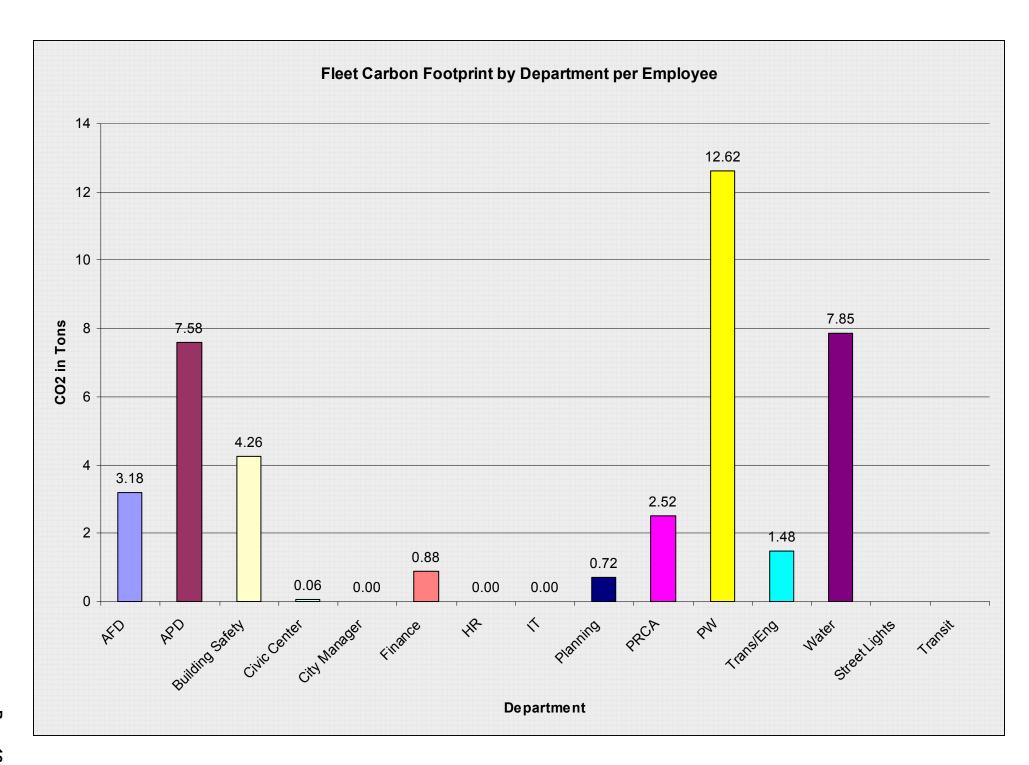




Fleet Fuel Usage By Department



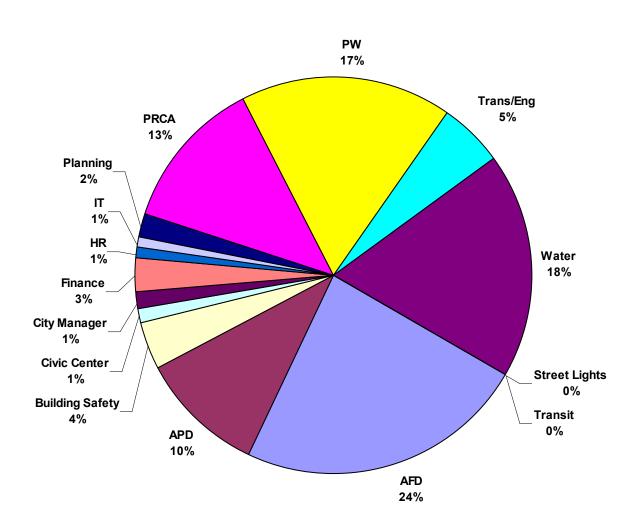
Note: Fleet vehicles include: fleet vehicles, off road construction equipment, landscaping equipment, and generators.

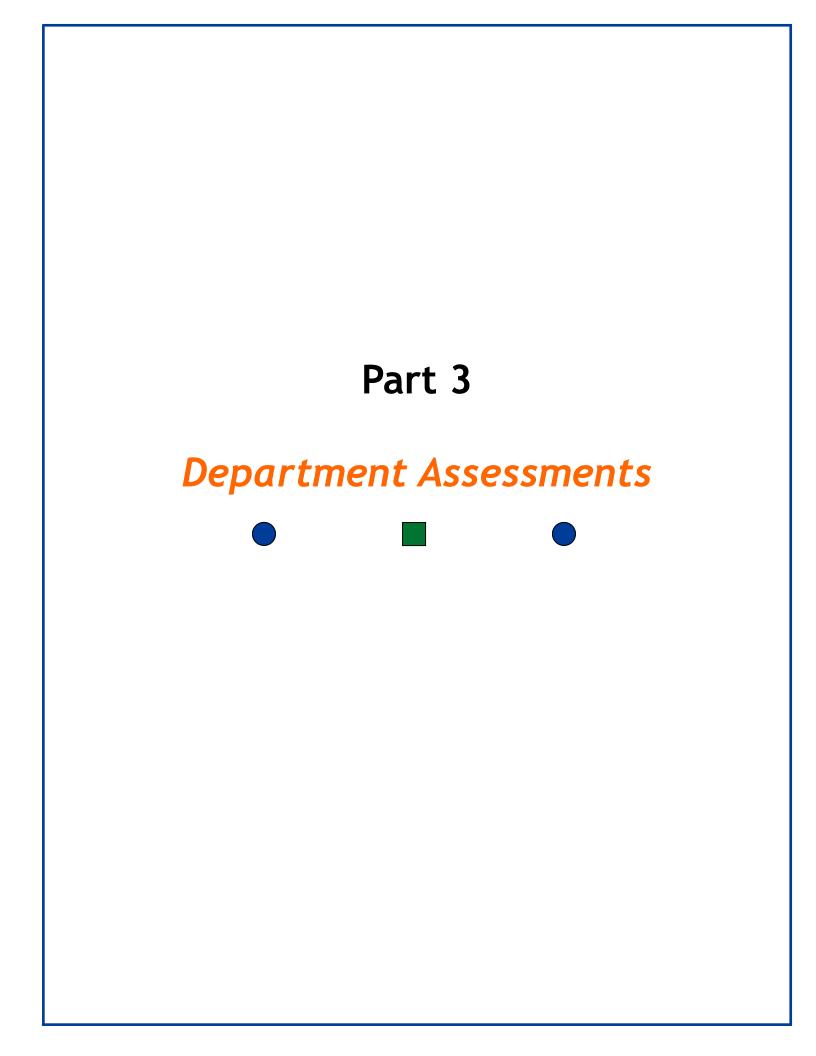


Employee Commute



Employee Commuter Carbon Footprint By Department



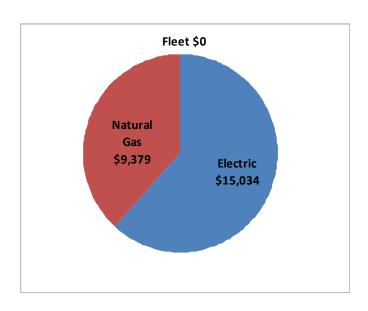




City Manager's Office

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
24

Average Daily Commute:
19.06 miles

Number of Fleet Vehicles*:
0

Total Carbon Footprint:
276 tons

Per Staff Carbon Footprint:
11.5 tons

Total Energy Costs:
\$24,413

Departmental Share of City's
Carbon Footprint:
1%

Total kWh:

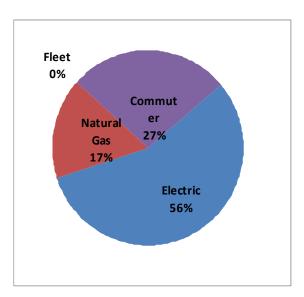
214,282

Total Natural Gas Therms: **7,310**

Total Gallons of Fuel Used:

Total Commuter Vehicle Miles Traveled:

152,466

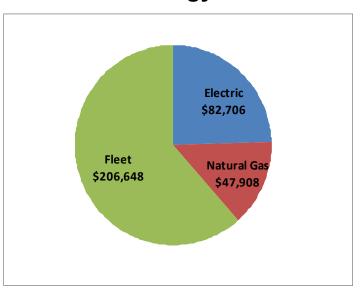




Asheville Fire and Rescue

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
233

Average Daily Commute:
31.09 miles

Number of Fleet Vehicles*:
121

Total Carbon Footprint:
3,030 tons

Per Staff Carbon Footprint:
13 tons

Total Energy Costs:
\$337,262

Departmental Share of City's
Carbon Footprint:
8%

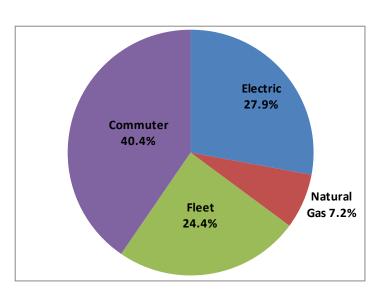
1,170,439 *Total Natural Gas Therms:* **35,999**

Total Gallons of Fuel Used: **69,608**

Total Commuter Vehicle Miles Traveled:

989,016

Total kWh:

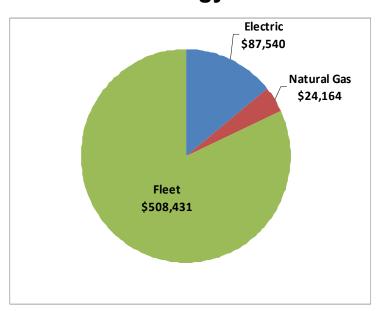




Asheville Police Department

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
261

Average Daily Commute:
26.39 miles

Number of Fleet Vehicles*:
254

Total Carbon Footprint:
3,606 tons

Per Staff Carbon Footprint:
13.8 tons

Total Energy Costs:
\$620,135

Departmental Share of City's
Carbon Footprint:
10%

Total kWh: **1,355,753**

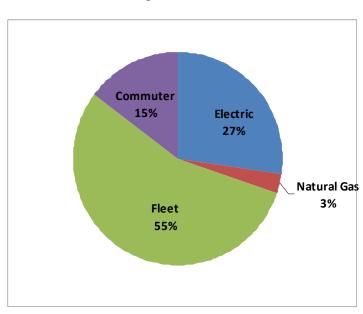
Total Natural Gas Therms: **18,519**

Total Gallons of Fuel Used:

184,890

Total Commuter Vehicle Miles Traveled:

633,595

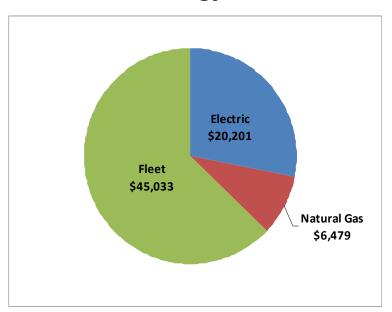




Building Safety

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
39

Average Daily Commute:
25.15 miles

Number of Fleet Vehicles*:
27

Total Carbon Footprint:
611 tons

Per Staff Carbon Footprint:
15.7 tons

Total Energy Costs:
\$71,713

Departmental Share of City's
Carbon Footprint:
2%

Total kWh:

314,348

Total Natural Gas Therms:

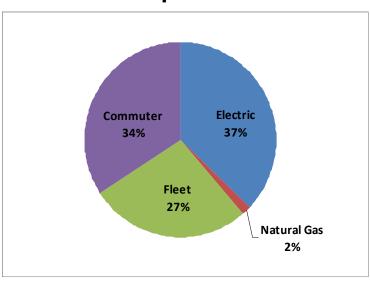
5,030

Total Gallons of Fuel Used:

15,575

Total Commuter Vehicle Miles Traveled:

252,984

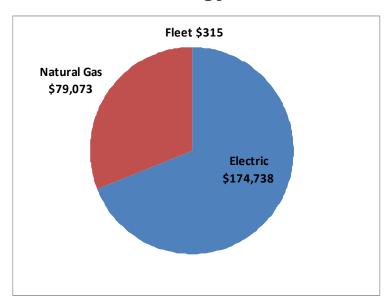




Civic Center

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:

18

Average Daily Commute:

18.8 miles

Number of Fleet Vehicles*:

9

Total Carbon Footprint:

1,957 tons

Per Staff Carbon Footprint:

108.7 tons

Total Energy Costs:

\$254,126

Departmental Share of City's

Carbon Footprint:

5%

Total kWh: **2,035,243**

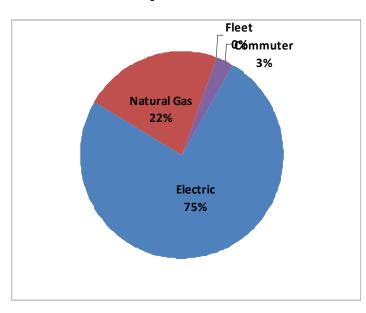
Total Natural Gas Therms:

69,232

Total Gallons of Fuel Used: **95**

Total Commuter Vehicle Miles

Traveled: **58,656**

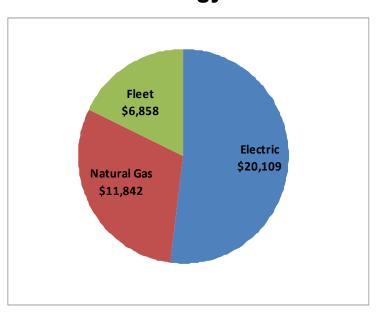




Finance Department

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
32

Average Daily Commute:
28.75 miles

Number of Fleet Vehicles*:
16

Total Carbon Footprint:
430 tons

Per Staff Carbon Footprint:
13.4 tons

Total Energy Costs:
\$38,809

Departmental Share of City's
Carbon Footprint:
1%

Total kWh:

282,260

Total Natural Gas Therms:

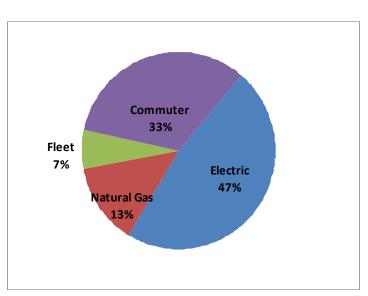
9,347

Total Gallons of Fuel Used:

2,557

Total Commuter Vehicle Miles Traveled:

244,498

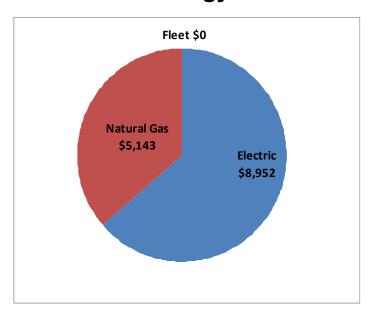




Human Resources

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:

16

Average Daily Commute:

20.7 miles

Number of Fleet Vehicles*:

0

Total Carbon Footprint:

161 tons

Per Staff Carbon Footprint:

10.1 tons

Total Energy Costs:

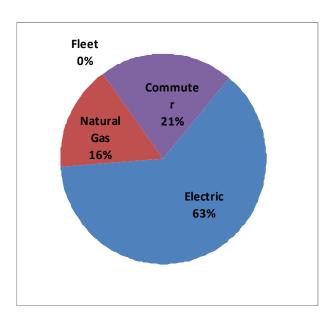
\$14,095

Departmental Share of City's

Carbon Footprint:

0.5%

Total kWh: 139,374 Total Natural Gas Therms: 4,202 Total Gallons of Fuel Used: 0 Total Commuter Vehicle Miles Traveled: 63,210

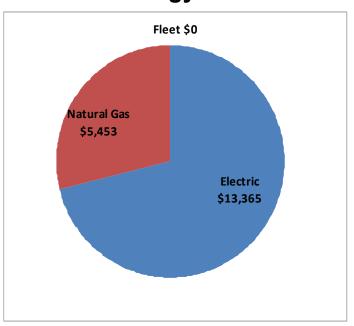




Information Technology Services

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:

17

Average Daily Commute:

10.4 miles

Number of Fleet Vehicles*:
6

Total Carbon Footprint:

233 tons

Per Staff Carbon Footprint:

13.1 tons

Total Energy Costs:

\$18,818

Departmental Share of City's

Carbon Footprint:

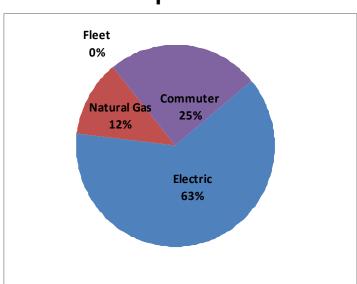
1%

Total kWh:
194,842

Total Natural Gas Therms:
4,455

Total Gallons of Fuel Used:
0

Total Commuter Vehicle Miles
Traveled:
97,344

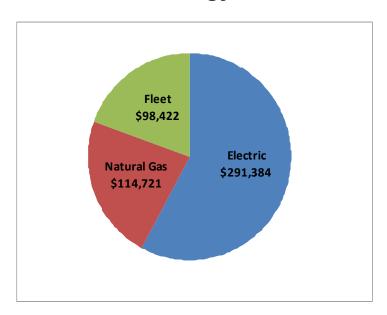




Parks Recreation & Cultural Arts

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
143

Average Daily Commute:
27.08 miles

Number of Fleet Vehicles*:
105

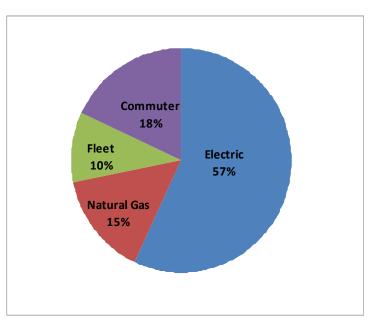
Total Carbon Footprint:
3,613 tons

Per Staff Carbon Footprint:
25.3 tons

Total Energy Costs:
\$504,527

Departmental Share of City's
Carbon Footprint:
10%

Total kWh: 2,847,792 Total Natural Gas Therms: 87,434 Total Gallons of Fuel Used: 33,782 Total Commuter Vehicle Miles Traveled: 828,994

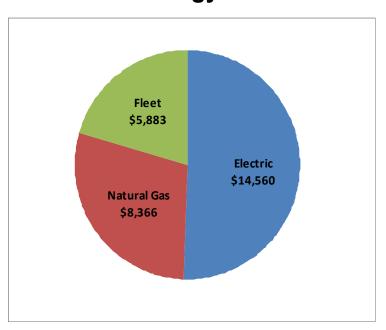




Planning & Development

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
32

Average Daily Commute:
20.31 miles

Number of Fleet Vehicles*:
7

Total Carbon Footprint:
322 tons

Per Staff Carbon Footprint:
10.1 tons

Total Energy Costs:
\$28,809

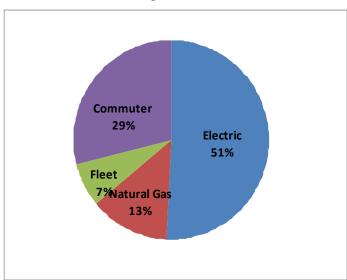
Departmental Share of City's
Carbon Footprint:
1%

Total kWh:
226,692

Total Natural Gas Therms:
6,835

Total Gallons of Fuel Used:
2,114

Total Commuter Vehicle Miles
Traveled:
139,604

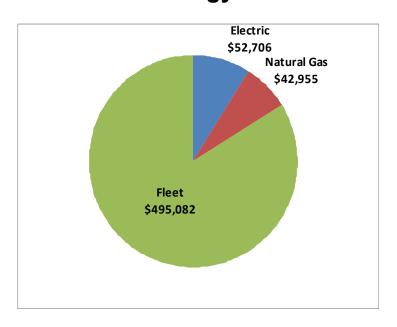




Public Works

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
143

Average Daily Commute:
25.42 miles

Number of Fleet Vehicles*:
251

Total Carbon Footprint:
3,407 tons

Per Staff Carbon Footprint:
23.8 tons

Total Energy Costs:
\$590,742

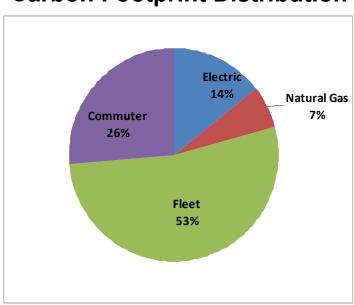
Departmental Share of City's
Carbon Footprint:
9%

Total kWh:
674,642

Total Natural Gas Therms:
39,231

Total Gallons of Fuel Used:
169,720

Total Commuter Vehicle Miles
Traveled:
910,454

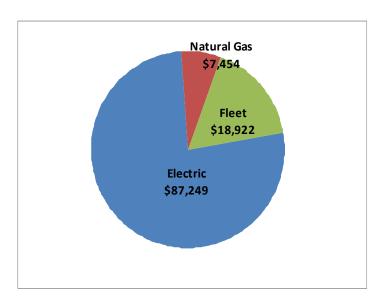




Transportation & Engineering

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
48

Average Daily Commute:
23.96 miles

Number of Fleet Vehicles*:
18

Total Carbon Footprint:
1,354 tons

Per Staff Carbon Footprint:
28.2 tons

Total Energy Costs:
\$113,625

Departmental Share of City's
Carbon Footprint:
4%

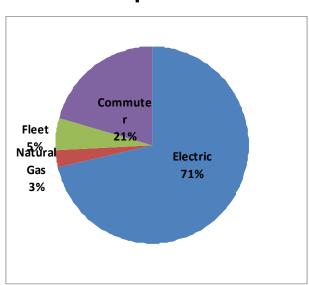
Total kWh: **1,383,772**

Total Natural Gas Therms: **5,895**

Total Gallons of Fuel Used: **6,649**

Total Commuter Vehicle Miles Traveled:

322,892

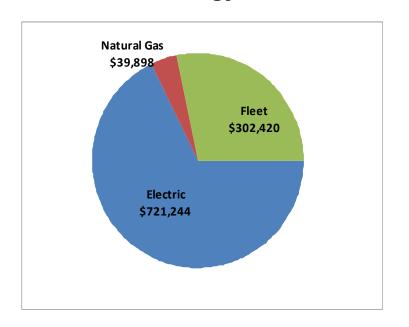




Water Resources

Fiscal Year of 2007 / 2008

Total Energy Costs



Number of Staff:
152

Average Daily Commute:
26.61 miles

Number of Fleet Vehicles*:
227

Total Carbon Footprint:
10,645 tons

Per Staff Carbon Footprint:
70 tons

Total Energy Costs:
\$1,063,562

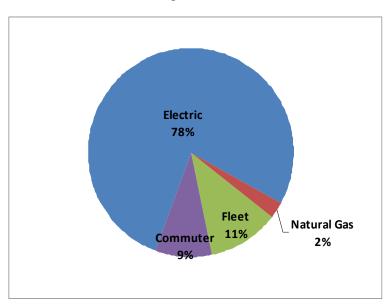
Departmental Share of City's
Carbon Footprint:
29%

Total kWh*:
11,404,532

Total Natural Gas Therms:
30,846

Total Gallons of Fuel Used:
111,619

Total Commuter Vehicle Miles
Traveled:
1,137,930



Note:

- The thirteen Departments comprise of 80.5% of the municipal carbon footprint. Transit Operations represent an additional 7% and street lighting comprises of the remaining 12%
- Vehicle Notations: The number of fleet vehicles displayed in each departmental assessment includes: fleet vehicles, off road construction equipment, landscaping equipment, and generators.
- Water Department Total kWh Notation: This total reflects the infrastructure for all Buncombe County water production including: 3 water production facilities, 35 water pump stations and the water administration building.